



Contribution ID: 300
compétition)

Type: **Oral (Student, In Competition) / Orale (Étudiant(e), inscrit à la**

Global Sequential Calibration of jets at ATLAS

Monday 16 June 2014 14:15 (15 minutes)

In the ATLAS experiment the measurement of hadronic final states usually involves the detection of collimated cones of particles, more simply called *jets*.

Despite all the efforts at the hardware and software levels to correctly reconstruct the 4-momenta of jets, there is still room for improvement.

Many factors can influence the shapes and amounts of energy deposited in detectors; for example, gluon-initiated and quark-initiated jets have different radiation patterns.

A sequential jet calibration based on global properties of jets (Global Sequential Calibration, or GSC) measured by the ATLAS detector was developed to account for these differences.

This calibration, based on Monte Carlo studies, aims to reduce the flavour uncertainty and to improve the resolution of jets.

In the case of high-energy jets, a correction is introduced to account for the energy lost by jets that are not contained within the calorimeters (leakage).

An overview of this calibration and the performance expected is presented.

The GSC was derived for $\sqrt{s} = 8\text{TeV}$ and jet sizes of $R=0.4$ and $R=0.6$.

Author: BATISTA, Santiago (University of Toronto (CA))

Co-authors: KINGHORN-TAENZER, Joseph Peter (University of Toronto (CA)); CAMACHO TORO, Reina Coromoto (Université de Genève (CH)); GUPTA, Shaun (University of Oxford (GB))

Presenter: BATISTA, Santiago (University of Toronto (CA))

Session Classification: (M1-4) Energy Frontier: Standard Model and Higgs - PPD / Frontière d'énergie: modèle standard et boson de Higgs - PPD

Track Classification: Particle Physics / Physique des particules (PPD)